EXHIBIT 1

HUNTERS POINT ANNEX

PARCEL A

RECORD OF DECISION

(Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act)

November 16, 1995

U.S. Department of the Navy,
Engineering Field Activity West,
Naval Facilities Engineering Command

CONTENTS

FIGURES

TABLES

1.0 DECLARATION FOR NO ACTION AT PARCEL A

1.1 SITE NAME AND DESCRIPTION

Hunters Point Annex, Parcel A
San Francisco, California

Hunters Point Annex (HPA) was deactivated and placed in industrial reserve in 1974. In 1989, this federal facility was placed on the National Priorities List (NPL). In 1991, HPA was selected and approved for closure under the Base Realignment and Closure (BRAC) program.

1.2 STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for Parcel A at HPA. The selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record for the site.

The U.S. Environmental Protection Agency (EPA) and the California Environmental Protection Agency (Cal/EPA) concur with the selected remedy.

1.3 DESCRIPTION OF THE SELECTED REMEDY: NO ACTION

The U.S. Department of the Navy (Navy) and EPA Region IX have selected no action for the following sites at Parcel A of HPA:

- IR-59: The groundwater underlying Parcel A
- IR-59 Jerrold Avenue Investigation (JAI): The soil at a residential lot on Jerrold Avenue within Parcel A

These sites are the only two sites at Parcel A that were carried through to the remedial investigation (RI) stage. All other sites investigated at Parcel A were determined by the Navy, EPA, and Cal/EPA to require no action at the conclusion of the site inspection (SI) stage of investigation. In selecting no action for the RI sites, the Navy has determined that the overall condition of Parcel A is protective of human health and the environment.

1.4 DECLARATION STATEMENT

Based on an evaluation of analytical data and other information, the Navy has determined that no remedial action is necessary to ensure the protection of human health and the environment at Parcel A. EPA Region IX and Cal/EPA concur with the Navy's determination. Specifically, this ROD selects the final remedy for sites IR-59 and IR-59 JAI at Parcel A. The groundwater underlying Parcel A (IR-59) does not meet the present and probable municipal supply criteria as defined by the single well supply criteria in the San Francisco Bay Regional Water Quality Control Board (RWQCB) Resolution No. 89-39 (incorporation of "Sources of Drinking Water Policy"). The concentrations of semivolatile organic compounds (SVOC) and metals detected in groundwater samples did not exceed EPA Region IX preliminary remediation goals (PRG). The only other substance detected, motor oil, is a petroleum product specifically excluded from the definition of "hazardous substance" and "pollutant or contaminant" in Section 101 of CERCLA and is, therefore, outside the scope of this ROD. Although the State of California has authority to regulate the remediation of motor oil in groundwater, the State does not intend to require further investigation, remediation, or groundwater monitoring (RWQCB 1995b). This parcel, however, will be subject to a deed notification so that future users of the parcel will be informed that motor oil was detected in groundwater. The concentrations of hazardous substances in the soil at IR-59 JAI are either within or below EPA's acceptable risk levels or, for metals, are at ambient levels. There are no other sites in Parcel A that

require investigation or remediation. Hazardous substances are not present at Parcel A at concentrations above acceptable risk levels and, therefore, the 5-year review requirement of CERCLA Section 121(c) is not applicable.

Mr. Michael McClelland
Navy BRAC Environmental Coordinator
Naval Facilities Engineering Command, Engineering Field Activity West

28 Nov 1995
Date

Ms. Julie Anderson
Chief, Federal Facilities Cleanup Office
EPA Region IX

11-28-95
Date

Mr. Anthony J. Landis
Chief of Operation, Office of Military Facilities
Department of Toxic Substances Control
Cal/EPA

11-29-95
Date

Ms. Loretta Barsamian
Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region

11.29.95
Date

2.0 DECISION SUMMARY FOR PARCEL A

2.1 SITE NAME, LOCATION, AND DESCRIPTION

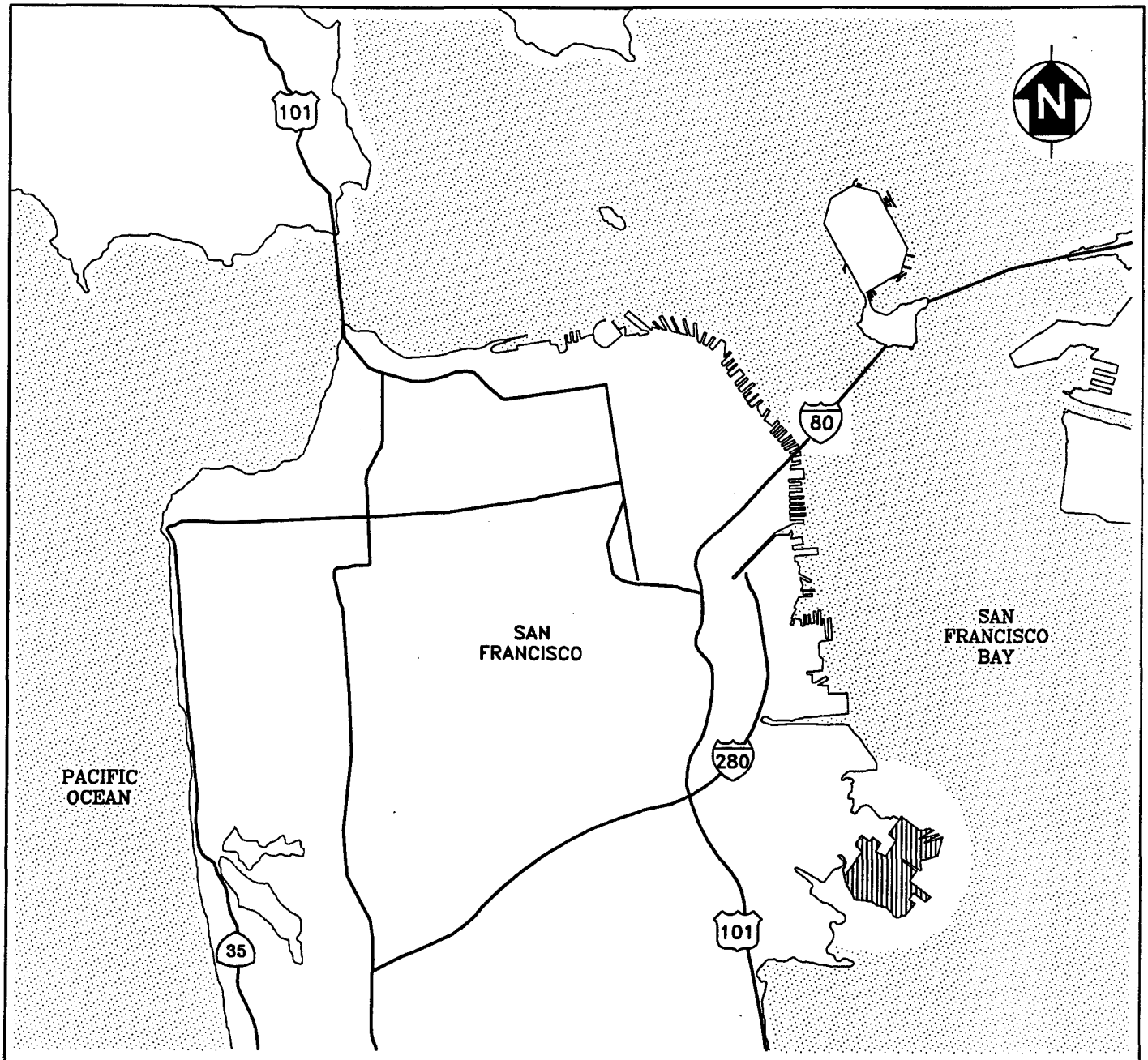
HPA is located on a promontory in southeast San Francisco (Figure 1). The promontory is bounded on the north and east by the San Francisco Bay and on the south and west by the Bayview-Hunters Point district of the City of San Francisco. The entire HPA covers 936 acres, 493 of which are on land and 443 of which are under water. To facilitate the environmental investigation and remediation, and ultimate transfer of the property, HPA was divided into several parcels (Parcels A through F) (Figure 2). This ROD addresses the remedy for sites at Parcel A.

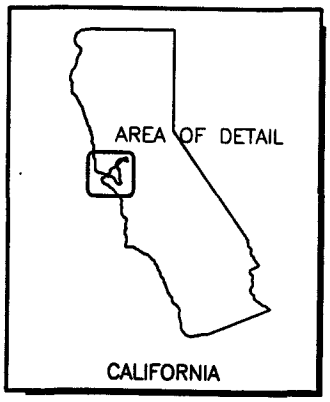
Parcel A is bounded by the other portions of HPA and the Bayview-Hunters Point district (Figure 3). Parcel A covers approximately 88 acres. Land to the northwest of Parcel A is used for residential purposes. The other HPA parcels that bound Parcel A are currently undergoing investigation and remediation for future redevelopment. Under the local reuse authority's current land-use plan, those parcels will ultimately be used primarily for commercial and industrial purposes, whereas Parcel A will be used for residential as well as for light commercial purposes.

Parcel A consists of the upland area of HPA and a portion of the lowlands. Ground surface elevations at Parcel A range from 0 to 18 feet above mean sea level (msl) in the lowlands to 180 feet above msl at the ridge crest.

The peninsula forming HPA is within a northwest-trending belt of Franciscan bedrock. Bedrock is present at the ground surface over most of Parcel A. In localized areas, the bedrock is overlain by fill material. There is evidence of past landslides on Parcel A.

No wetlands or surface waters are located at Parcel A. Limited quantities of groundwater are present in localized fractures of the bedrock. However, Parcel A groundwater is not suitable as a potential source of drinking water because of low well yield. Groundwater from the bedrock discharges through springs and seeps along Parcel A slopes.





HUNTERS POINT ANNEX

1.5 0 1.5 3
SCALE: 1" = 3 MILES

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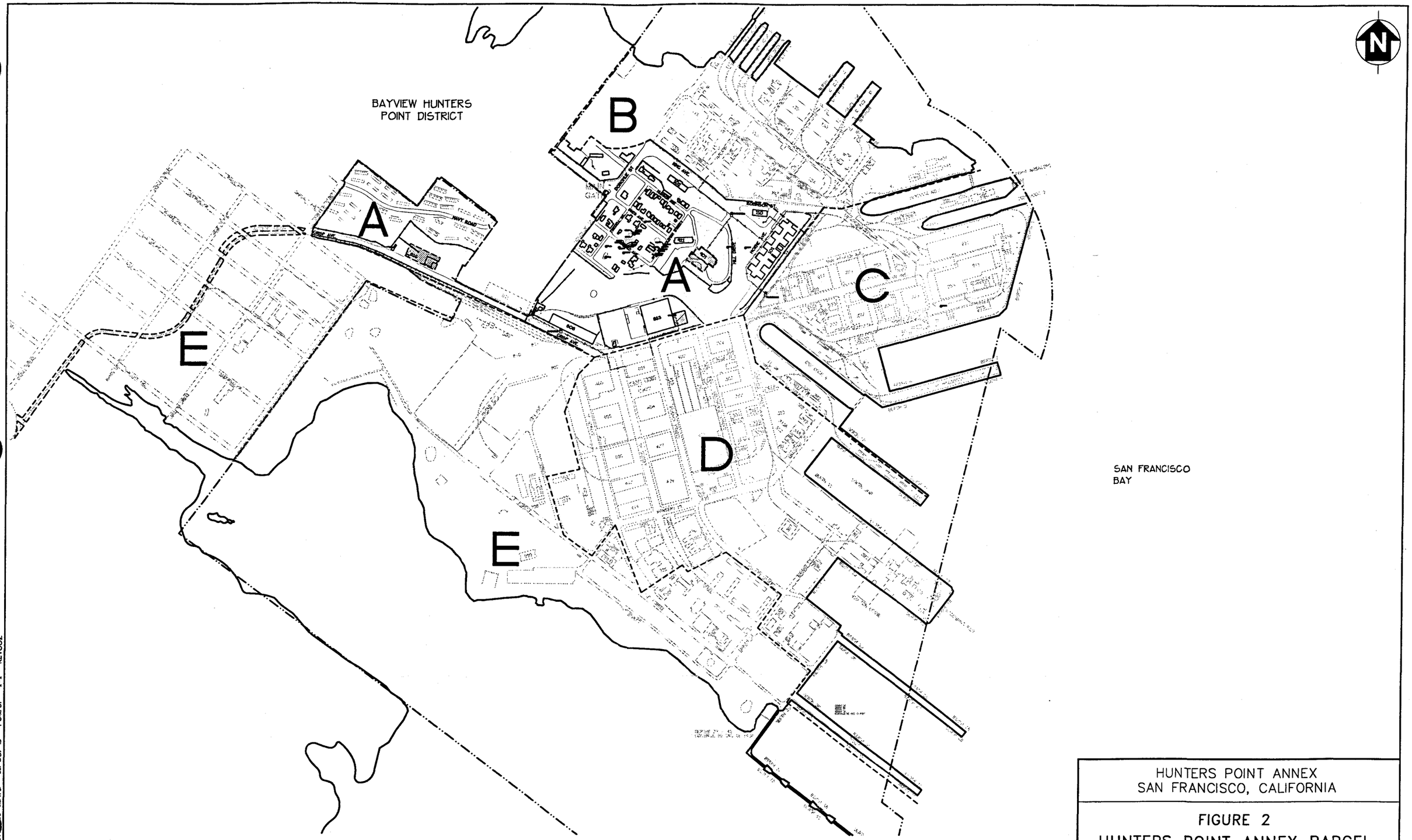
HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

FIGURE 1
FACILITY LOCATION MAP

PRC ENVIRONMENTAL MANAGEMENT, INC.



HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

FIGURE 2
HUNTERS POINT ANNEX PARCEL LOCATION MAP

PRC ENVIRONMENTAL MANAGEMENT, INC.

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BAYVIEW
HUNTERS POINT
DISTRICT

A

B

C

D

E

OAKDALE AVE.
GRIFFITH STREET
NAVY ROAD
CRISP AVE.
817A
816
SI-41
815
821
808
CRISP AVE.

HUDSON AVE
INNES AVE.
DONOHUE ST.
MAIN GATE
102
JERROLD AVE.
DONOHUE ST.
FRIEDELL ST.
IR59
JAI
SI-43
921
901
SI-19
HILL DRIVE
KING AVE.
110
ROBINSON ST.
HORNE AVE.
101
813
SI-77

Legend

- STEAM LINE (SI-45)
- PARCEL BOUNDARY
- TRANSFORMER LOCATION (SI-51)
- SEWER LINES (SI-50)
- STORM LINES (SI-50)
- NON-UTILITY SI SITE
- IR SITE

NOTES:
1. 1948. SAN FRANCISCO NAVAL SHIPYARD. CONTROL DIAGRAM STEAM AND CONDENSATE LINES. P.W. DRAWING NO. 16013-137
2. AN ADDITIONAL SITE, IR-59 GROUNDWATER, UNDERLIES THE ENTIRE PARCEL AND IS NOT SHOWN.

150' 0 150' 300'
SCALE: 1"=300'

HUNTERS POINT ANNEX
SAN FRANCISCO, CALIFORNIA

FIGURE 3
PARCEL A
SITE MAP

PRC ENVIRONMENTAL MANAGEMENT, INC.

KCHCSFXC044-C RSIA.DWG - 11/15/95 - 1=1 - REV003

No underground storage tanks (UST), aboveground tanks, drums, or hazardous materials storage areas remain on Parcel A. Sewer lines, storm drains, and steam lines located in Parcel A were included in the early investigations of the property, which found no further investigation was required.

2.2 SITE HISTORY

2.2.1 Background

Hunters Point was first developed for dry dock use in 1867. The Navy acquired title to the land in 1940 and began developing the area for various shipyard activities. In 1942, the Navy began using HPA for shipbuilding, repair, and maintenance. From 1945 to 1974, the shipyard was primarily used as a repair facility by the Navy. The Navy discontinued activities at HPA in 1974. From 1976 to 1986, the Navy leased 98 percent of HPA, including all of Parcel A, to the Triple A Machine Shop (Triple A), a private ship repair company. In 1986, the Navy reoccupied the property. Currently, portions of Parcel A are subleased for use as artists' studios.

Throughout its history, both the Navy and Triple A used Parcel A primarily for residential purposes. In addition, the Navy used one building on Parcel A as a radiation laboratory. Most of the other structures were used as offices and warehouses. Currently, approximately 61 buildings are located on the property, 45 of which are former residences. In addition, the foundations of 43 other structures are located on Parcel A.

The Navy began environmental studies at HPA in 1984 under the U.S. Department of Defense's Installation Restoration Program. Between 1984 and 1991, the Navy performed a series of installation-wide investigations to identify potential source areas of contamination and to investigate air quality (WESTEC Services, Inc. 1984; Aqua Terra Technologies [ATT] 1987; EMCON Associates 1987; Environmental Resources Management, West 1988; YEI Engineering, Inc. 1988a and 1988b; Harding Lawson Associates [HLA] 1992; Brown & Caldwell 1995). In addition, the Navy conducted investigations in discrete areas of Parcel A (HLA 1987 and 1988; ATT 1987).

In 1989, EPA added HPA to the NPL. In 1990, the Navy, EPA Region IX, and the State of California entered into a Federal Facilities Agreement (FFA) to coordinate environmental activities at HPA. In 1991, the U.S. Department of Defense designated HPA for closure as an active military base under its BRAC program.

2.2.2 Site Inspection Activities at Parcel A

As the first phase in the CERCLA process, the Navy conducted a preliminary assessment/site inspection (PA/SI) of seven potential source areas identified during the Navy's previous investigations. Site-specific histories of each of these areas, referred to as SI sites, are provided below.

Parking medians in front of Building 901: The landscaped medians in front of Building 901, the Officers' Club, were identified as a potential source because the medians were filled in part with sandblast waste and oily materials. The medians are referred to as site SI-19, which is shown on Figure 3.

Buildings 816 and 818: Building 816 is the former Naval Radiological Defense Laboratory (NRDL) High Voltage Accelerator Laboratory. The NRDL conducted operations at the building until 1976. Because of the presence of a former drum storage area behind Building 816, the area was identified as a potential source area. Building 818 is the former Chlorinating Plant used for chlorinating water. These buildings and the surrounding areas are designated as site SI-41, which is shown on Figure 3.

Former Building 906: Building 906, the Gardening Tool House, was used to store pesticides. For this reason, the building was identified as a potential source area. It is designated as site SI-43, which is shown on Figure 3.

Portions of the steam line system within Parcel A: The steam line system, constructed in 1950, spans the entire installation. The system was used to supply steam to heat facility buildings and docked ships and to facilitate the flow of oil through oil lines. Steam for Parcel A was generated at boiler plants located on other parcels. The Navy identified the lines as a

potential source based on the remote possibility that waste oil was transported through the Parcel A steam lines. The HPA-wide steam line system is designated as site SI-45. The steam lines in Parcel A are shown on Figure 3.

Portions of the storm drain and sanitary sewer systems within Parcel A: The storm drain and sanitary sewer systems for HPA were constructed in the 1940s and 1950s as a combined system. By 1976, the two systems had been separated. Currently, the storm drains at Parcel A flow into storm drains at other parcels, eventually discharging into San Francisco Bay. Flow from the sanitary sewer system is directed to Pump Station A, which pumps sewage off site for treatment and ultimate discharge through the City of San Francisco's publicly-owned treatment works. The HPA-wide system is referred to as site SI-50; the storm drains and sanitary sewer lines are shown on Figure 3.

Locations of transformers containing polychlorinated biphenyls: Buildings and areas throughout HPA where transformers containing polychlorinated biphenyls (PCB) were located are referred to as site SI-51. At Parcel A, a visual inspection conducted as part of the SI identified one former transformer location near Building 819 and nine current transformer locations. SI-51 is shown on Figure 3.

Former underground storage tank S-812: A steel UST installed in 1976 was used to store fuel for a boiler located in Building 813. It is unknown when the UST was taken out of service. In August 1991, the UST and its associated piping were excavated and removed from the site. The former UST location is designated as site SI-77, which is shown on Figure 3.

An SI was performed on each of these sites in 1993 (PRC and HLA 1993). The SI results are summarized on Table 1. The Navy concluded that no further action was required at the seven SI sites described above because the sites do not pose a risk to human health and the environment. The EPA and Cal/EPA concurred that no action is required at these sites.

TABLE 1 SUMMARY OF SITE INSPECTION RESULTS FOR PARCEL A SITES REQUIRING NO FURTHER INVESTIGATION

SITE	SI DESIGNATION	CONSTITUENTS DETECTED DURING SITE INSPECTIONS	RISK ASSESSMENT RESULTS
Building 901 Parking Medians	SI-19	SVOCs Pesticides PCBs Petroleum hydrocarbons Metals	Soil characterized during the investigation by excavation[a] was replaced with clean soil. Soils remaining do not pose a threat to human health or the environment.
Buildings 816 & 818	SI-41	VOCs SVOCs Petroleum hydrocarbons Metals	Soil characterized during the investigation by excavation[a] was replaced with clean soil. Soils remaining do not pose a threat to human health or the environment.
Former Building 906	SI-43	VOCs SVOCs Pesticides Herbicides PCBs Petroleum hydrocarbons Metals	Soil characterized during the investigation by excavation[a] was replaced with clean soil. Soils remaining do not pose a threat to human health or the environment.
Steam Lines	SI-45	No contamination was found.	No threat to human health or the environment.
Storm Drains & Sanitary Sewer	SI-50	Pesticides Herbicides	No threat to human health or the environment.
Transformers	SI-51	No contamination was found.	No threat to human health or the environment.
UST S-812	SI-77	VOCs SVOCs Petroleum hydrocarbons Metals	No threat to human health or the environment.

Note:

[a] An investigation technique combining soil excavation and site characterization.

2.2.3 Remedial Investigation Activities at Parcel A

Based on data collected during the SI investigation at site SI-50 (the storm drains and sanitary sewer systems), the Navy conducted an RI of the groundwater underlying Parcel A (referred to as the IR-59 site). During the groundwater investigation, the Navy discovered sandblast grit waste containing paint chips in the backfill of a sanitary sewer line in a lot along Jerrold Avenue. As a result, the Navy included this area (referred to as the IR-59 JAI site) in the RI. The results of the RI are presented in Section 2.5.

2.3 HIGHLIGHTS OF COMMUNITY PARTICIPATION

In the late 1980s, the Navy formed a technical review committee (TRC) consisting of community members and representatives of regulatory agencies. The TRC met to discuss environmental issues pertaining to HPA. In 1993, pursuant to the Defense Environmental Restoration Program, 10 U.S.C. Section 2705(d), the Navy formed a Restoration Advisory Board (RAB), which replaced the TRC. The RAB is composed of members of the community, the Navy, and the regulatory agencies. The RAB meets monthly to discuss environmental progress at HPA.

The draft RI report for Parcel A was released to the public in June 1995. The proposed plan for Parcel A was released to the public in August 1995. Both the draft RI report and the proposed plan were made available to the public in the administrative record file and in information repositories located at the City of San Francisco Main Library and the Anna E. Waden Branch Library. In addition, the proposed plan was mailed to the more than 1,100 people on the HPA project mailing list. A notice of availability of the proposed plan was published in *The San Francisco Sunday Examiner/Chronicle* on August 6, 1995; in *The Independent* on August 15, 1995; and in *The New Bayview* on August 20, 1995. A 30-day public comment period on the proposed plan was held from August 7, 1995, through September 5, 1995. A public meeting was held on August 22, 1995. At that meeting, representatives of the Navy presented the basis for the proposed no action alternative and were available to answer questions about the proposed plan. A response to the comments received at the public meeting and during the public comment period is included in the Responsiveness Summary, which is Appendix A of this ROD. These community participation activities fulfill the requirements of Section 113(k)(2)(B)(i-v) and Section 117(a)(2) of CERCLA.

2.4 SCOPE AND ROLE OF THE NO ACTION ALTERNATIVE

HPA is a large federal facility containing numerous potential source areas. To facilitate the investigation, remediation, and property transfer process under BRAC, sites on HPA have been grouped into geographical parcels.

In addition to Parcel A, five other parcels have been designated and are undergoing assessment activities. Under the current FFA schedule, the final ROD approval dates for the other parcels are as follows:

Parcel Designation	Final ROD Approval Date
Parcel B	February 1997
Parcel C	December 1997
Parcel D	July 1997
Parcel E	May 1998

The Navy also intends to perform an ecological risk assessment for the recently designated Parcel F, which encompasses the submerged portions of HPA.

The Navy's site management strategy is to accelerate actions at sites while identifying and closing out assessment activities at sites not requiring action. This strategy meets President Clinton's goal of quickly identifying parcels of property that can be transferred to the community or other agencies under the BRAC program.

Parcel A is the first HPA parcel for which a remedy has been selected. Only two sites (IR-59 and IR-59 JAI) on Parcel A were carried through to the RI stage. This ROD selects the remedy for these two sites. As a result of the site investigation activities conducted during the RI, the soil at IR-59 JAI does not pose a significant risk to human health or the environment; therefore, no action is necessary for the site. Similarly, no action is necessary for IR-59, the groundwater underlying Parcel A. Because the groundwater does not meet the present and probable municipal supply criteria as defined by the single well supply criteria in the RWQCB Resolution No. 89-39 (incorporation of "Sources of

Drinking Water Policy"), it is unlikely to be used as a source of drinking water. Moreover, historical records indicate groundwater at Parcel A has never been used as a drinking water source, and water in the bedrock is found only in limited quantities and in isolated areas. For these reasons, there is no complete pathway for exposure to groundwater. The SVOCs and metals detected in groundwater samples did not exceed EPA Region IX PRGs. The only other substance detected was total petroleum hydrocarbons (TPH) as motor oil, at concentrations of 600 micrograms per liter or less. TPH is not a hazardous substance as defined in CERCLA. Although the State of California has authority to regulate the remediation of motor oil in groundwater, the State does not intend to require further investigation, remediation, or groundwater monitoring (RWQCB 1995b). This parcel, however, will be subject to a deed notification so that future users of the parcel will be informed that motor oil was detected in groundwater. In summary, based on current information, no action is required at Parcel A because the sites do not pose an unacceptable risk to human health and the environment.

2.5 SITE CHARACTERISTICS

2.5.1 IR-59

The Parcel A groundwater investigation was initiated as part of the SI for the Parcel A storm drain and sanitary sewer systems (SI-50). During the groundwater assessment of these systems, groundwater collected from a boring was analyzed and found to contain SVOCs, TPH as motor oil, and metals. As a result, the preliminary investigation conducted during the SI was expanded to an RI, and the groundwater under Parcel A was designated as site IR-59. Although TPH is not defined as a hazardous substance under CERCLA, TPH analysis was included in the RI analytical program.

The only aquifer present at Parcel A is the bedrock aquifer, which is the upper weathered and deeper fractured portions of the Franciscan bedrock. Groundwater in bedrock at Parcel A is present in localized fractures that are sporadic and discontinuous.

Parcel A groundwater does not meet the present and probable municipal supply criteria as defined by the single well criteria in RWQCB Resolution No. 89-39 (incorporation of "Sources of Drinking Water"). Under the RWQCB definition, groundwater is not a suitable or potentially suitable source of water for municipal or domestic water supply if it does not provide sufficient water to supply a

single well capable of producing an average, sustained yield of 200 gallons per day (gpd). Based on aquifer tests, Parcel A groundwater wells are unable to produce 200 gpd. The RWQCB agrees that Parcel A groundwater does not meet the criteria as a source of drinking water under the RWQCB's definition (RWQCB 1995a).

During the RI, the Navy collected groundwater grab samples from open boreholes and trenches as well as samples from six monitoring wells. Samples were analyzed for volatile organic compounds (VOC), SVOCs, TPH, pesticides, PCBs, and metals. To evaluate whether further action was appropriate, analytical results were compared against EPA Region IX PRGs and federal and state maximum contaminant levels (MCL) for drinking water.

No VOCs were detected in any groundwater samples. The only SVOCs detected (naphthalene, 2-methylnaphthalene, and n-nitrosodiphenylamine) were present at concentrations below EPA Region IX PRGs. The highest concentrations of the SVOCs detected and their respective PRGs are shown on Table 2. Arsenic was detected in groundwater samples at levels above its PRG but below MCLs. Low concentrations of TPH as motor oil were detected in two small areas on Parcel A. A comprehensive discussion of the groundwater investigation and the nature and extent of the compounds detected in groundwater is presented in the RI report (PRC 1995b). In summary, no hazardous substances as defined under CERCLA were detected above health-based levels in any of the groundwater samples.

2.5.2 IR-59 JAI

The RI at IR-59 JAI was initiated upon the discovery of sandblast grit containing paint chips during the groundwater investigation at a lot along Jerrold Avenue. A sample of mixed sandblast grit and soil was analyzed and found to contain pesticides, low levels of SVOCs, TPH as diesel fuel and as motor oil, and metals.

The Navy used field screening analysis and "investigation by excavation" to characterize the nature and extent of chemicals of concern in soil and to accelerate the overall investigation of IR-59 JAI.

TABLE 2 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS[a], IR-59 GROUNDWATER INVESTIGATION PARCEL A, HUNTERS POINT ANNEX

Detected Analyte	PRG[b]	Maximum Detected Concentration
SVOCs		
2-Methylnaphthalene	NE[c]	42
Naphthalene	240	12
n-Nitrosodiphenylamine	14	12
TPHs		
TPH as motor oil	NE	600
Metals		
Aluminum	37,000	216[d]
Antimony	15	2.1[d]
Arsenic	0.038	3.1[d], 3.8[e]
Barium	2,600	440[d], 449[e]
Calcium	NE	44,700[d], 45,500[e]
Magnesium	NE	38,600[d], 39,300[e]
Manganese	180	28.4[d], 19.9[e]
Molybdenum	180	12.4[d], 14.5[e]
Nickel	730	2.3[d,e]
Potassium	NE	7,310[d], 7,440[e]
Sodium	NE	82,048[d], 83,400[e]
Vanadium	260	3.0[d], 2.8[e]

Notes:

[a] Concentrations in micrograms per liter
[b] EPA Region IX PRGs (EPA Feb 1995a)
[c] NE = Not established
[d] Unfiltered samples
[e] Filtered samples

During the investigation, soil and sandblast grit were excavated and disposed of at an approved off-site facility, and confirmation samples were collected and tested using an EPA-approved immunoassay-based test method. Soil excavation and confirmation sampling continued until field testing resulted in pesticide concentrations below the detection limit. In addition, samples were sent to a laboratory and analyzed for SVOCs, pesticides, PCBs, TPH as motor oil and diesel, and metals. Soil excavated during the investigation was replaced with clean soil. Tables 3, 4, and 5 summarize data on the compounds in soil after the completion of the investigation. A comprehensive discussion of the soil investigation and the nature and extent of compounds detected in soil is presented in the Parcel A RI report (PRC 1995b).

2.6 SUMMARY OF SITE RISKS

2.6.1 Human Health Risk Assessment

During the RI, the Navy considered the potential human health risks associated with sites IR-59 and IR-59 JAI. The RI risk analysis is described below.

Human exposure to groundwater at Parcel A is highly unlikely for the following reasons:

- Parcel A groundwater is present only in limited fractures or in poorly interconnected and sporadic fractures in the bedrock.
- In areas where groundwater was detected, individual wells are capable of yielding only insignificant and nonsustainable quantities of water.
- Historical records confirm that groundwater in Parcel A bedrock has never been used as a source of drinking water.
- The City of San Francisco's current groundwater policy excludes groundwater in Parcel A bedrock from future development based on the distribution of water in the bedrock and its characteristics.

For these reasons, there is no complete pathway for exposure to groundwater. Based on this fact and the fact that CERCLA-regulated substances were not detected above PRGs, no human health risk assessment (HHRA) for exposure to groundwater was performed. EPA and Cal/EPA concur that an HHRA for groundwater is unnecessary (EPA 1995b).

TABLE 3 SUMMARY OF SOIL ANALYTICAL RESULTS FOR SVOCs AND PESTICIDES AFTER INVESTIGATION BY EXCAVATION AT IR-59 JAI[a] PARCEL A, HUNTERS POINT ANNEX

Detected Analyte	Detected Concentration Range	Sample Detection Frequency[b]	PRG[c]
SVOCs			
Benzo(a)anthracene	39 - 61	4 of 6	610
Benzo(a)pyrene	38 - 50	4 of 6	61
Benzo(b)fluoranthene	38 - 49	3 of 6	610
Benzo(k)fluoranthene	51 - 67	3 of 6	6,100 (610)[d]
Chrysene	56 - 180	4 of 6	24,000 (6,100)[d]
Fluoranthene	53 - 200	6 of 6	2,600,000
Indeno(1,2,3-cd)pyrene	22 - 24	3 of 6	610
Naphthalene	27	1 of 6	800,000
Phenanthrene	21 - 91	6 of 6	NE[e]
Pyrene	78 - 270	6 of 6	2,000,000
Pesticides			
4,4'-DDD	0.64	1 of 25	1,900
4,4'-DDE	0.94 - 250	21 of 25	1,300
4,4'-DDT	1.2 - 420	23 of 25	1,300
Aldrin	0.38	1 of 25	26
alpha-BHC	1.5	1 of 25	71
alpha-Chlordane	0.5 - 97	13 of 25	340[f]
gamma-Chlordane	0.46 - 97	12 of 25	340[f]
Heptachlor	1.7 - 37	2 of 25	99
Heptachlor epoxide	0.94	1 of 25	49

Notes:

[a] Concentrations in micrograms per kilogram
[b] Only samples of soil in which SVOCs or pesticides were detected after investigation by excavation are listed.
[c] EPA Region IX PRGs (EPA Feb 1995a)
[d] Cal-modified PRGs (EPA 1995a)
[e] NE = Not established
[f] EPA Region IX PRG for chlordane (plain)

TABLE 4 SUMMARY OF SOIL ANALYTICAL RESULTS FOR TPHs AFTER INVESTIGATION BY EXCAVATION AT IR-59 JAI[a] PARCEL A, HUNTERS POINT ANNEX

Detected Analyte	Detected Concentration Range	Sample Detection Frequency[b]
TPH as diesel	8.6	1 of 4
TPH as motor oil	7.1 - 720	4 of 4

Notes:

[a] Concentrations in milligrams per kilogram
[b] Only samples of soil in which TPHs were detected after investigation by excavation are listed.

TABLE 5 SUMMARY OF SOIL ANALYTICAL RESULTS FOR METALS AFTER INVESTIGATION BY EXCAVATION AT IR-59 JAI[a] PARCEL A, HUNTERS POINT ANNEX

Detected Analyte	Detected Concentration Range	PRGs[b]	Detection Frequency Above PRG[c]	HPAL[d]	Detection Frequency Above HPAL[c]
Antimony	0.98 - 10.7	31	0 of 41	9.05	1 of 41
Arsenic	0.43 - 8.1	0.32	40 of 41	11.1	0 of 41
Barium	54.1 - 810	5,300	0 of 41	314.36	1 of 41
Beryllium	0.24 - 0.56	0.14	36 of 41	0.71	0 of 41
Chromium (not speciated)	42.4 - 1,790	210[e]	19 of 41	82 - 1,258	1 of 41
Cobalt	10 - 173	NE[f]	NE	17 -129	1 of 41
Copper	6.2 - 609	2,800	0 of 41	124.31	1 of 41
Lead	3.7 - 101	400 (130)[g]	0 of 41	8.99	20 of 41
Manganese	286 - 1,075	380	35 of 41	NE	NE
Nickel	41.7 - 2,928	1,500 (150)[g]	1 of 41	71 - 3,061	0 of 41
Zinc	25.2 - 423	23,000	0 of 41	109.86	9 of 41

Notes:

[a] Concentrations in milligrams per kilogram
[b] EPA Region IX PRGs (EPA Feb 1995a)
[c] Only samples of soil in which metals were detected after investigation by excavation are listed.
[d] Hunters Point Annex ambient level (PRC 1995a)
[e] EPA Region IX PRG for total chromium
[f] NE = Not established
[g] Cal-modified PRGs (EPA 1995a)

The Navy conducted an HHRA based on exposure to soil remaining at IR-59 JAI following the investigation under both a commercial/industrial worker scenario and a residential scenario. The industrial/commercial assessment considered surface soils (0 to 2 feet below ground surface [bgs]), whereas the residential assessment considered all soil samples (0 to 5.5 feet bgs). To evaluate human health risks, EPA has established an acceptable range of risk levels that are presented as hypothetical excess lifetime cancer risks (CR) for carcinogens. Acceptable exposure levels are generally concentration levels that represent a hypothetical excess upper-bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} or less. EPA has also established hazard indices (HI) to evaluate the risks associated with noncarcinogens. An HI of less than 1 is generally considered protective of human health. If the HI is greater than 1, an assessment of the chemicals is performed to determine whether the HI represents an unacceptable noncarcinogenic human health risk.

EPA Region IX PRGs were used as reference concentrations to evaluate potential risks from exposure to soils. The PRGs assume the reasonable maximum exposure (RME) to an individual that is expected to occur. Risk-based PRGs use RME parameter values to estimate concentrations in environmental media that correspond to a CR of 10^{-6} or an HI of 1.0. The Region IX PRGs are used to convert exposure point concentrations for each chemical detected at each site to a CR or HI as appropriate. To characterize the CR, the Region IX PRG is used to convert the exposure point concentration for each chemical of concern into a CR number.

Commercial and industrial workers may be exposed to compounds detected at IR-59 JAI through direct soil exposure. Direct soil exposure includes ingestion and dermal contact with soil and inhalation of fugitive dusts. The potential risks associated with direct soil exposure were determined using EPA Region IX PRGs; for chromium, the PRG for total chromium was used. The total HI was calculated to be 0.1 under the commercial/industrial worker scenario. Because this value is less than 1, noncarcinogenic health effects are not expected under the commercial/industrial worker scenario. The estimated CR for all detected chemicals from soil exposure is 5×10^{-7}, which is below the lower end of EPA's acceptable risk range of 10^{-4} to 10^{-6}. Therefore, no significant carcinogenic risks are expected from exposure to the remaining IR-59 JAI soils under a commercial/industrial worker scenario.

Future residents may be exposed to chemicals through direct soil exposure and through ingestion of homegrown produce. The potential risks associated with direct soil exposure were determined using the EPA Region IX PRGs; for chromium, the PRG for total chromium was used. The potential risks related to ingestion of homegrown produce were calculated using standard risk assessment methodology. To account for all potential risks, the residential HI was calculated for exposure of children to soil, and the residential CR was calculated for the first 30 years of life. Nickel, chromium, and manganese primarily drive the noncarcinogenic risk (the HI). Using the toxicity value for manganese based on food ingestion, the HI is estimated to slightly exceed 1.0. However, this HI includes chromium and nickel which are present at concentrations similar to ambient levels (see Table 5). Excluding ambient concentrations of chromium and nickel, the HI is estimated to be less than 1.0. The CR is primarily driven by chromium, benzo(a)pyrene, and heptachlor. The total estimated CR at IR-59 JAI under the residential use scenario is estimated to be 7×10^{-6}, which is within EPA's acceptable risk range. Accordingly, under a residential use scenario, no significant carcinogenic risks are expected from exposure to IR-59 JAI soils.

Table 6 summarizes the HHRA results. The RI report presents a comprehensive analysis and discussion of the human health risk assessment (PRC 1995b). Based on the results of the risk assessment, the Navy, EPA, and Cal/EPA agree that site IR-59 JAI does not pose a significant threat to human health. The Navy, EPA, and Cal/EPA further agree that, because no exposure to groundwater will occur, site IR-59 does not pose a threat to human health.

2.6.2 Qualitative Ecological Risk Assessment

Potential risks to ecological receptors from Parcel A were qualitatively evaluated by the Navy as part of the Basewide Phase 1A ecological risk assessment (PRC 1994) and by the EPA in a screening level qualitative ecological risk assessment (QERA)(EPA 1994). Because most of Parcel A is developed and covered by manmade structures, such as housing and roads, the Basewide Phase 1A ecological risk assessment does not identify any significant exposure routes for terrestrial species. Accordingly, the ecological risk assessment report concludes that the risk to ecological receptors is minimal. Likewise, in the QERA, EPA concludes that the risks to terrestrial ecological receptors are minimal based on the limited availability of habitat, the scarcity of potential receptors, and the low level of compounds detected.

TABLE 6 RESULTS OF HUMAN HEALTH RISK ASSESSMENT, IR-59 JAI

Exposure Scenario	Exposure Pathway	HI[a]	CR[b]
Industrial/Commercial (Current)	Soil ingestion Dermal contact Inhalation of dust	0.1	5×10^{-7}
Residential (Future)	Soil ingestion Dermal contact Inhalation of dust Ingestion of produce	< 1.0	7×10^{-6}

Notes:

[a] HI - Hazard Index
[b] CR - Cancer Risk

2.7 DESCRIPTION OF "NO ACTION" ALTERNATIVE

Based on the results of the RI, as described in this ROD, the two RI sites, IR-59 and IR-59 JAI, do not pose an unacceptable risk to human health or the environment. Specifically, IR-59, the groundwater underlying Parcel A, does not meet the present and probable municipal supply criteria as defined by the single well supply criteria in RWQCB Resolution No. 89-39 (incorporation of "Sources of Drinking Water Policy"); therefore, it is unlikely to be used as a source of drinking water. Moreover, the concentrations of SVOCs and metals detected in groundwater samples did not exceed EPA Region IX PRGs. The only other substance detected, motor oil, is a petroleum product specifically excluded from the definition of "hazardous substance" and "pollutant or contaminant" in Section 101 of CERCLA and is, therefore, outside the scope of this ROD. Although the State of California has authority to regulate the remediation of motor oil in groundwater, the State does not intend to require further investigation, remediation, or groundwater monitoring (RWQCB 1995b). This parcel, however, will be subject to a deed notification so that future users of the parcel will be informed that motor oil was detected in groundwater. After the investigation by excavation, the concentrations of hazardous substances in the soil at IR-59 JAI are either within or below EPA's acceptable risk levels or, for metals, are at ambient levels. Accordingly, no action is appropriate for the RI sites. The EPA and Cal/EPA agree with this determination. All other SI sites investigated in Parcel A were determined to require no further action at the conclusion of the SI stage of investigation. The Navy's selection of no action for the RI sites reflects the determination that the overall condition of Parcel A is protective of human health and the environment.

2.8 EXPLANATION OF SIGNIFICANT CHANGES

The proposed plan for the Parcel A RI sites was released for public comment in August 1995. The proposed plan identifies no action as the preferred alternative for the sites. The Navy and EPA reviewed all written and oral public comments submitted during the public comment period. Upon review of these comments, it was determined that no significant changes to the remedy originally identified in the proposed plan were necessary.

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APPENDIX A

RESPONSIVENESS SUMMARY

APPENDIX A

RESPONSIVENESS SUMMARY

1.0 OVERVIEW

As set forth in its proposed plan, the U.S. Department of the Navy (Navy) selected no action for the following sites at Parcel A of Hunters Point Annex (HPA):

- IR-59: The groundwater underlying Parcel A
- IR-59 Jerrold Avenue Investigation (JAI): The soil at a residential lot on Jerrold Avenue within Parcel A

These sites are the only two sites at Parcel A that were carried through to the remedial investigation (RI) stage. All other sites investigated at Parcel A were determined by the Navy to require no action at the conclusion of the site inspection (SI) stage of investigation. U. S. Environmental Protection Agency (EPA) Region IX and the California Environmental Protection Agency (Cal/EPA) concur with the decision on the SI sites and the selection of the no action remedy for the RI sites.

2.0 COMMUNITY INVOLVEMENT

The Navy is responsible for conducting the community relations program for HPA. A community relations plan was established in 1989 as a means of obtaining community input into the remedial program at the installation. In addition, the Navy formed a technical review committee (TRC), consisting of community members and regulatory agency representatives, to discuss environmental conditions at HPA; in 1993, the TRC was replaced by a restoration advisory board (RAB) that meets monthly to discuss environmental activities at HPA.

The Navy has established two information repositories for HPA. One information repository is at the Anna E. Waden Branch Library located at 5075 Third Street in San Francisco. The second information repository is at the City of San Francisco Main Library located at the Civic Center in San Francisco.

A draft remedial investigation/feasibility study (RI/FS) for Parcel A was released to the public in June 1995. Based on the conclusion in the RI that Parcel A does not pose a risk to human health and the environment, the Navy, EPA, and Cal/EPA agreed that the Feasibility Study (FS) report was not necessary. Therefore, the final Parcel A RI report did not include an FS.

Prior to public release of the proposed plan, a draft of the proposed plan was provided to the regulatory agencies for review and comment. As explained in the responses to specific comments, comments from Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (RWQCB) placed in the record during the public meeting were on the earlier draft of the proposed plan. As these comments were included during the public comment period, responses are provided in this responsiveness summary.

In August 1995, the proposed plan for Parcel A was mailed to the more than 1,100 people on the HPA project mailing list. This mailing list has been developed over the years to include all interested community members that the Navy has been able to reach through its community outreach efforts. A notice of availability of the proposed plan was published in *The San Francisco Sunday Examiner/Chronicle* on August 6, 1995; in *The Independent* on August 15, 1995; and in *The New Bayview* on August 20, 1995. Copies of the proposed plan were placed in the administrative record and the information repositories.

A public comment period on the proposed plan was held from August 7, 1995, through September 5, 1995. A public meeting was held on August 22, 1995. A transcript of the public meeting is available to the public at the information repositories. These community participation activities fulfill the requirements of Section 113(k)(2)(B)(i-v) and Section 117(a)(2) of CERCLA.

The purpose of the responsiveness summary is to document public comments and questions during the public comment period (August 7, 1995 to September 5, 1995) on the proposed no action remedy for Parcel A and the Navy's responses to those comments. Specifically, this responsiveness summary provides responses to oral comments received on the proposed plan during the public meeting held on August 22, 1995, at the Southeast Community Center located in the Bayview Hunters Point neighborhood and written comments received during that meeting as well as written comments

received from the City and County of San Francisco Department of Public Health (August 30, 1995) and ARC Ecology (September 2, 1995).

3.0 SUMMARY OF MAJOR COMMENTS

Concerns raised during the public comment period focused on the results of the human health risk assessment and the appropriateness of a deed notification. In particular, members of the local community expressed concerns about the timing of the public meeting and the perceived slowness in the cleanup process. The six major issues raised during the public comment period are summarized below.

Issue: Why did the Navy hold a public meeting for the proposed plan for Parcel A prior to the restoration advisory board (RAB) meeting?

The RAB meetings, held monthly, and the public meeting on the proposed plan for Parcel A, held on August 22, 1995, serve different purposes. The RAB meetings allow community members to participate in the technical aspects of the environmental program at HPA. Approximately 20 community members participate in these meetings. The public meeting on the proposed plan, provided for under CERCLA, is intended to obtain comment from a much broader cross section of the community. In this case, the proposed plan was sent to approximately 1,100 community members to reach a broad cross-section of the community. In addition, notice of the meeting was published in three different newspapers.

To facilitate RAB involvement in the Parcel A remedy selection decision, the Parcel A RI report was sent to the RAB members in June 1995 and the RAB members had the opportunity to present their comments at the public meeting. The Navy scheduled a RAB meeting to discuss the proposed plan prior to the general public meeting on the proposed plan. However, due to circumstances beyond the Navy's control, that meeting could not be held prior to the August 22, 1995 general public meeting and was, instead, held on August 23, 1995.

Issue: Did the Navy adequately investigate Parcel A?

Yes. The Navy investigated those areas on Parcel A that were suspected and/or reported to be contaminated. The Navy collected soil and groundwater data from each suspected source area. Based on those data, the Navy performed human health risk assessments using EPA methodologies. Those assessments found that the sites do not pose an unacceptable human health risk. Specifically, there is no complete pathway for exposure to groundwater. Additionally, at several sites, excavation and disposal of soil during investigation activities reduced the risk. The results of those investigations are contained in the 1993 Parcel A site investigation report and the 1995 Parcel A remedial investigation report.

Under CERCLA Section 120(h)(3), a deed for the transfer of property owned by the United States on which hazardous substances were stored for one year or more, known to have been released, or disposed of must contain a covenant warranting that all remedial actions necessary to protect human health and the environment have been taken before transfer and that any additional remedial actions found to be necessary after transfer shall be conducted by the United States. At Parcel A, the Navy has determined that all known contamination has been investigated and addressed as appropriate and the site conditions on Parcel A are protective of human health and the environment.

Issue: Can the Navy speed up the process of transferring the property at Hunters Point Annex?

The Navy's primary goal is a speedy transfer of property at HPA for reuse by the local community. However, property cannot be transferred before the Navy is certain that all cleanup actions necessary to protect human health and the environment have been taken. To speed up the cleanup process, the Navy has formed a BRAC Cleanup Team (BCT) and a RAB to include the regulatory agencies and the public in virtually every aspect of its planning and execution. The Navy has requested that the agencies participate in the preparation of documents to minimize review and comment time and to promote cooperation in the cleanup process, thereby accelerating cleanup and providing the basis for property transfer. The Navy and the agencies have recently renegotiated the FFA schedules with the intent of speeding up the cleanup process.

Issue: Will the Navy abandon the wells at Parcel A?

If the wells are not transferred to the new owners, the Navy will abandon the wells at Parcel A in accordance with applicable regulations prior to transfer of the property.

Issue: Will the Navy prepare a deed notification for the motor oil in groundwater at Parcel A?

The Navy will work with the RWQCB, San Francisco Redevelopment Agency (SFRA), and San Francisco City Attorney staffs to negotiate and draft language that would be acceptable to all parties concerning deed notification of the motor oil in groundwater at Parcel A. This process will occur as part of the real estate transfer process.

Issue: Is the human health risk assessment (HHRA) adequate for the Parcel A investigations?

Yes. The no action alternative was selected for Parcel A based on conclusions drawn from an investigation to determine the nature and extent of chemicals of concern and the HHRA. The Parcel A RI HHRA, which was prepared using a methodology developed by the EPA, assumed current industrial and future residential use of the parcel. The conclusions of the HHRA indicate that the Parcel A sites are protective of human health under both a current industrial and a future residential scenario.

4.0 SPECIFIC COMMENTS RECEIVED AND RESPONSES

The comments or questions are extracted from the transcript of the public meeting or from letters received by the Navy, and the Navy has provided written responses below. Unedited comments from RWQCB, ARC Ecology, and individuals from the community are presented below in bold text, followed by the Navy's responses. The Navy received comments that covered a range of issues.

Comments Received at the Public Meeting:

Oral comments from the public meeting from a member of the Restoration Advisory Board for Hunters Point Annex.

1 **Comment:** **During the question and answer portion of the public meeting an individual asked about the appropriateness of the Navy holding the public meeting on the proposed plan before the plan was discussed with the restoration advisory board.**

Response: The RAB was formed pursuant to Department of Defense guidance to facilitate community involvement in the environmental issues pertaining to HPA. The RAB consists of community individuals who provide input on technical issues pertaining to Hunters Point Annex. A public meeting, which is required by EPA's community relations guidance for proposed plans, is intended to reach a broader cross section of the community. In fact, the proposed plan was distributed to approximately 1,100 community members on August 4, 1995.

To facilitate RAB involvement in the remedy selection process, the Navy scheduled a RAB meeting to discuss the proposed plan prior to the general public meeting. However, due to circumstances beyond the Navy's control, the RAB meeting was held on August 23, 1995, the day after the August 22, 1995 public meeting.

ARC Ecology had the following comments on the RI/FS:

1 **Comment:** **Given the somewhat accidental discovery of the IR-59 JAI site, there are a few statements in the IR/FS that give us some concern, like "numerous small, artificial silt is present on the site as a result of filling, past construction, underground utility installation, and possibly filling ravines and swales." And the statement "relatively small and unmapped silt deposits" is the phrase. Those give us some concerns, because we wonder what the likelihood is that those unmapped silt deposits are, in fact, contaminated. And I would like to see this addressed somewhere in the RI/FS.**

Response: There is a very low possibility of widespread use of sandblast grit material in the artificial fill areas referred to in the Parcel A Remedial Investigation (RI) report because the areas were filled in the early 1940's as part of the preparation of the Hunters Point facility for use by the Navy or possibly even earlier by prior owners. The sandblast grit material discovered at IR-59 JAI was probably used to backfill a utility connection to a temporary building, and was unassociated with the filling of ravines and swales.

2 **Comment:** **This involves the Work Plan Addendum that is presented in Appendix K, and this addendum was prepared to address Agency and Redevelopment Agency concerns about VOC's in the groundwater around the former underground storage tank at SA-12. According to this addendum, four groundwater samples were to be taken on each side of the pit, some distance from the pit, to determine the extent of groundwater, possible groundwater contamination. In fact, only one groundwater sample was collected. The three other borings were dry. And I have a few questions about that sample. First, I would like to know where it is. It was not in the RI/FS where that groundwater was drawn from, which of the four borings it was taken from, so I would like to have that addressed. And I'm wondering if the sampling location that actually had water in it satisfied the San Francisco Redevelopment Agency's concern about groundwater contamination west of the site. They were quite specific about wanting to understand that there is the plume traveling to the west; and since I don't know where the sample was taken, I don't know if that concern was addressed. And then, based on this one sample, one groundwater sample, the RI/FS concludes that no substantial groundwater contamination was found at that tank site. And I would need some help understanding how that one sample proves that there is no groundwater contamination as a result of that underground storage tank, former tank, that has been removed.**

Response: The Navy is confident that there is no groundwater contamination problem at Parcel A. Soil samples were taken from the underground storage tank (UST) excavation and around the former UST location. Only very low levels of VOCs were detected in one of the soil samples. The groundwater samples from the excavation indicated very low levels of VOCs in one sample and the duplicate sample indicated no VOCs present. Because of this isolated detection, and to address the San Francisco Redevelopment Agency's concerns, four additional borings were drilled around the UST. Only the boring to the west of the former UST encountered groundwater. Samples from that boring contained no chemicals of concern. Section 3.0 of the draft final Parcel A RI report concerning former UST S-812 has been revised to include more information about the locations of the borings and the groundwater sample.

3 **Comment:** **The RI/FS also does not address adequately the uncertainty associated with the conclusions presented in the RI/FS. I would like to see a little discussion about how adequate the sampling program was statistically to answer the questions that the RI/FS is supposed to answer, which is to describe the contamination at the Parcel A site. So I would like a little discussion about the uncertainty associated with the sampling and the sampling methodology and also the Risk Assessment part of the RI/FS.**

Response: The regulatory agencies and the Navy believe the conclusions of the draft final Parcel A RI report are supported by the data collected during the site inspections and remedial investigations. The sampling methodologies were discussed with the regulatory agencies prior to field activities. The RI report describes the sampling methodology, including the number and distribution of samples collected at each of the sites at Parcel A. Appendix E contains the human health risk assessment, which discusses the methodology and approach used by the Navy and approved by the agencies. The risk assessment also discusses the uncertainties associated with that analysis.

4 **Comment:** **The RI/FS did a weak job of explaining to me, anyway, what the extent of the motor oil contamination is all over the Parcel A site; and I would like to see a summary in the RI/FS that addresses specifically motor oil contamination on Parcel A.**

Response: Section 5.0 of the draft final Parcel A RI report addresses the distribution of total petroleum hydrocarbons as motor oil detected in all IR-59 groundwater samples. Total petroleum hydrocarbons as motor oil were detected at low levels, sporadically in borings and wells in the upland portion of Parcel A and in the well in the parking lot in front of Building 101.

5 **Comment:** **Lead contamination appears to be a problem at two sites SI-43 and SI-41. And I would like to see these areas addressed in the RI/FS, and I would like to know what action the Navy intends to take on those alleged contaminated sites. I understand that the Investigation by Excavation covered these areas with soil, but in most cases only a couple of feet of clean soil is put over these contaminated areas. And we are concerned that, as the site is developed and graded and rearranged to put buildings on it, that these areas will be exposed to the air, exposure with children and gardens and that sort of thing. They won't remain covered forever, that is the point.**

Response: Lead is not a problem at sites SI-41 or SI-43. These sites were investigated by the technique of investigation by excavation. This process reduced the levels of contaminants at the sites. Lead concentrations detected in soils at SI-41 and SI-43 are presented in the Parcel A SI HHRA. Lead was detected in seven soil samples left in place ranging from 9.1 to 186 mg/kg at site SI-41. Lead was detected in 34 soil samples left in place ranging from 0.26 to 311 mg/kg at site SI-43. Based on the health protective level developed using an EPA methodology and comparison to EPA Region IX PRGs, the concentrations of lead detected at SI-41 and SI-43 do not pose a risk to human health and the environment.

Written Comments Received at the Public Meeting

Comments from an individual from the Bayview Hunters Point neighborhood.

1 **Comment:** **Is there any way to speed up the process? So many issues are to be resolved, and time is of the essence. When???**

Response: In an effort to accelerate the cleanup process, the Navy has formed a BRAC Cleanup Team (BCT) comprised of Navy, EPA, and DTSC representatives. The BCT is continually looking for ways to accelerate the investigation and cleanup process. The purpose of the BCT is to accelerate cleanup by including the agencies in virtually every aspect of planning and execution of the cleanup process. The Navy has requested that the agencies participate in the preparation of documents to help minimize the number of comments and promote cooperation in the cleanup process, which should shorten the cleanup program. However, the cleanup process is not a rapid process. By law, many steps are required to ensure that human health and the environment are adequately protected. Nevertheless, when possible, the BCT will continue to expedite the process by, for example, reducing document review times. The Navy and the agencies have recently renegotiated the FFA schedules with the intent of speeding up the cleanup process.

Comments from Mr. Richard Hiett, the California Regional Water Quality Control Board. These comments were read into the public meeting transcript and received in writing in a letter from the DTSC and RWQCB dated July 28, 1995, from Mr. Cyrus Shabahari of DTSC to Mr. William Radzevich of the Navy.

1 **Comment:** **As described in the Summary of Proposed Alternatives, it is unclear if monitoring wells will be abandoned (closed) in both alternatives or only in Alternative 2. Both alternatives should properly close all monitoring wells that will not be in service. Further clarification is required. The costs associated with well closing are nominal in comparison to the overall**

project and should not be the reason for alternative selection. Therefore the difference in these "alternatives" appears to be the deed notification.

Response: This RWQCB comment refers to the draft Parcel A RI/FS report. In the draft version of the report an FS was included which had two no action alternatives, as mentioned above. Following EPA guidance on preparation of a Record of Decision (ROD), only one no action alternative is discussed in the proposed plan for Parcel A. Closing of the wells was only considered in Alternative 2 in the draft Parcel A RI/FS report. The FS was deleted from the draft final Parcel A RI report after the Navy received concurrence from the agencies that it was not necessary.

The Navy will discuss with the future owner the option to use the wells for monitoring. If the wells are not transferred, the Navy will abandon them in accordance with applicable regulations prior to transfer of Parcel A. At present, the wells are covered and locked to prevent tampering with them.

The cost of closing the wells was not a major consideration for selecting Alternative 1. As noted, the deed notification is the major difference between Alternatives 1 and 2.

2 **Comment:** **Board staff have previously discussed property transfer concerns and deed notification requirements, for the residual motor oil pollution in groundwater, with Navy staff and their consultants. Board staff concur that based on the level of effort expended in these investigations and the type of pollution found, the concentrations of motor oil detected in groundwater within the Parcel A bedrock does not require further investigation, remediation or groundwater monitoring. However, as stated in the draft RI, the groundwater at Parcel A is not well characterized due to the inherent complexities within the bedrock formation. Because of these complexities Board staff have always maintained that deed notification should be included as part of any no**

action alternative for Parcel A. The purpose of a deed notice is to alert potential buyers and developers. It is not intended to thwart development or stigmatize the property. Disclosure of past and present environmental problems is part of the most, if not all, real estate transactions. HPA is no exception. Board staff are available to work with the City and Navy staff to draft acceptable language that meets all parties needs.

Response: The RWQCB concurred with the Navy that motor oil detected in groundwater within the Parcel A bedrock does not require further investigation, remediation, or groundwater monitoring. The Navy will work with the RWQCB staff to negotiate and draft language that would be acceptable to all parties concerning deed notification for the motor oil in groundwater at Parcel A for the real estate transfer process.

Other Written Comments Received During the Public Comment Period

Comments from Ms. Amy Brownell, City and County of San Francisco Department of Public Health.

1 **Comment:** **We have reviewed the draft final proposed plan for Parcel A and have the following comments. As proposed by the Navy, the difference between the "no action" alternative versus a "limited action" alternative (as described in the Parcel A RI/FS) is the deed notification and the abandonment (closing) of wells on Parcel A. The Navy should properly abandon the wells on Parcel A regardless of the decision it makes for the proposed plan and the well abandonment should not be part of the proposed plan decision. The proper abandonment of all wells on Parcel A should be considered part of completing the environmental cleanup and properly closing the site. Contaminated sites under the oversight of the Department of Public Health are issued final closure notices only when well abandonment has been completed, as required under California Well Standards, Bulletin 74-90. These standards should be considered an ARAR for the Navy on Parcel A.**

The well abandonment should not be a factor in the proposed plan, because it has no impact on environmental contaminants or exposures. The wells themselves are not contributing to or reducing environmental contaminants or exposures, they are just a way to monitor and take samples of the groundwater. If left in place, wells can become conduits for further groundwater contamination (e.g., if someone accidentally pours something down the wells) and therefore are required to be properly removed in order to complete closure of a site. The only reason to consider leaving the wells in place is if the San Francisco Redevelopment Agency (SFRA), as part of the reuse planning, is interested in keeping and reusing these wells on the property. The Navy should discuss this issue with the SFRA.

Response: The Navy will discuss with the future owner the option to use the wells for monitoring. If the wells are not transferred, the Navy will abandon them in accordance with applicable regulations prior to the transfer of Parcel A.

2 **Comment:** **As far as the deed notification is concerned, we understand from the Regional Water Quality Control Board's (RWQCB) comments of July 27, 1995, that the RWQCB has requested that deed notification be included as part of the Navy's proposed plan. RWQCB staff also stated that they will work with City and Navy staff to draft acceptable language that meets all parties needs. The Navy should consult with the SFRA and the City Attorney to draft deed notification language that will be acceptable to all parties.**

Response: The Navy will work with the RWQCB, SFRA, and San Francisco City Attorney staffs to negotiate and draft language that would be acceptable to all parties concerning deed notification for the motor oil in groundwater at Parcel A for the real estate transfer process.

3 **Comment:** **In addition to these comments about the overall proposed plan, we have a concern with the statements on page five concerning the risks from ingestion of fruits and vegetables. An example is given comparing the risk to that of a child eating 30 pounds of fruits and vegetables grown at the site each year. If you are going to have such an example you should describe why this scenario is unlikely or why it is not of concern and give a comparison of the amount of fruit and vegetables that an average child eats per year.**

Response: Under EPA guidance, risk assessments are generally conducted using both reasonable maximum exposures (RME) and average exposures. The HHRA for Parcel A was conducted using only a RME scenario which assumes the highest exposure that is reasonably expected to occur at a site.

Using RME exposure parameters, a child is assumed to consume 30 pounds of fruits and vegetables per year, 12 pounds of fruits and 18 pounds of vegetables, grown at the site. The RME assumption overestimates the hazards because a garden in a residential plot in San Francisco is not expected to produce enough fruits and vegetable for a child to consume such quantities. If average exposure factors were used to estimate risk, the amount of home-grown produce that is consumed is estimated to be 1.2 pounds of fruit and 1.8 pounds of vegetables, or an order of magnitude less than the exposure parameters used in the HHRA. Using these parameters, the carcinogenic risks and noncarcinogenic hazards associated with the ingestion of home-grown produce would fall below EPA's acceptable level.

Arc Ecology had two broad areas of concern: residual contamination at five of the nine Site Investigation (SI) and Remedial Investigation (RI) sites and poor characterization of issues concerning the parking lot spring. These comments, and the Navy's responses to these comments, are presented below.

1 **Comment:** **Arc supports prompt transfer of clean properties that maximize reuse options to the City of San Francisco. Since the City of San Francisco anticipates that Parcel A will be redeveloped for residential purposes, it seem only prudent that all of Parcel A be cleaned to residential standards. The Navy must ensure that filled areas remain protective of health, even when uncovered as a result of site grading and excavation for new foundations during planned reconstruction.**

Arc supports remediation that protects the health of potential users and honors their concerns over the long term. Residents of the Hunters Point neighborhood continue to express concern about contamination in the area. That the San Francisco Department of Health conducted a study in 1995 to compare incidence of cancer in the Bayview Hunters Point neighborhood to those in the San Francisco Bay Area largely in response to residents' concern over possible exposure to harmful chemicals shows that people in the community take seriously threats to their health resulting from local contamination. Potential Parcel A residents ought to feel confident that they will be able to live in their new homes, allow their children to play, garden, and eat their homegrown vegetables without fear of illness or shortened lifespan resulting from residual contamination.

Arc Ecology finds little evidence to support "no action" as the appropriate remedial action alternative for Parcel A. The information presented in the Navy's Draft Final Proposed Plan for Parcel A, Hunters Point Annex, and supporting documents, do not support the Navy's contention that all of the nine Site Investigation (SI) and Remedial Investigation (RI) sites indeed "do not pose a threat to human health or the environment."

The Navy reports in the RI document:

- **hazard indices 1.4 to 36 times above health-protective standards for children exposed to soils given a residential exposure scenario at sites SI-19, SI-41, SI-43, SI-50, and IR-59 JAI**

- **hazard indices 2 to 100 times above health-protective standards for vegetable consumption for both children and adults at sites SI-19, SI-41, SI-43, IR-59, and IR-59 JAI**

- **soil lead contamination above California-modified Preliminary Remediation Goals at sites SI-41 and SI-43**

- **cancer risk of 2 x 10^{-3} at IR-59-JAI. Generally risks below 10^{-4} to 10^{-6} are considered protective of human health by the Environmental Protection Agency.**

We based our comments on information presented in the DRAFT Parcel A Remedial Investigation/Feasibility Study Report, Dated June 30, 1995. We understand that PRC intends to substantially revise this report before producing the Draft Final RI/FS. This, too, causes us to question the appropriateness of proposing "no action" at this time.

Since the remaining contaminated areas are small compared to total Parcel A acreage, Arc sees no reason why cleaning these sites to residential standards should delay transfer of title to the City, or for that matter delay redevelopment efforts. In the meantime, before full cleanup, the Navy should post warnings and restrict activities on the still-contaminated SI/RI sites until they indeed pose no threat to human health.

Response: The Navy would like to emphasize that residual soil contamination at Parcel A does not pose a risk to human health and the environment. The no action alternative was selected for Parcel A based on conclusions drawn from an investigation conducted to determine the nature and extent of chemicals of concern and the HHRA. The Parcel A RI HHRA was prepared using a methodology developed by the EPA for the residential scenario. The conclusions of the HHRA indicate that the Parcel A sites are protective of human health for a residential scenario.

As discussed below, because of the conservative assumptions used in risk assessments, the hazard indices (HI) and carcinogenic risks (CR) are often over estimated. For example, HIs were probably overestimated because of the assumptions on which the calculations were based. First, the HHRA assumed that chemicals were spread evenly throughout the site. In fact, most chemicals of potential concern are extremely localized and are primarily located beneath 0.5 to 5.5 feet of clean soil. Second, because organics were detected in relatively few samples (less than 10 percent), the maximum detected value was used in the HHRA. Accordingly, because the maximum detected value was used, the risks and hazards for these organic chemicals is overestimated. Third, for the inorganic chemicals of concern detected above ambient concentrations in at least one sample, the exposure point concentration of these inorganics were used in the risk calculations. Manganese and chromium were detected above their ambient concentrations in less than 10 percent of the samples and were therefore included in the risk calculations. Because manganese and chromium are present largely at ambient concentrations, the risks and hazards calculated overestimate risks to human health.

In addition, the use of EPA Region IX PRG toxicity factors for manganese and chromium -- two of the primary risk drivers -- overestimate the risk related to the ingestion of home-grown produce. For example, the toxicity factor used for manganese was 0.005 which was developed for the ingestion of manganese through drinking water. A more appropriate toxicity factor for the ingestion of manganese through food is 0.14 -- a difference of approximately 2 orders of magnitude. Using the 0.14 toxicity factor, the hazard due to manganese would fall well below EPA's acceptable risk levels. Chromium was evaluated assuming that chromium is present as chromium VI. In general, chromium in soils is present as either elemental chromium or chromium III. Using the toxicity factor for chromium III (1) rather than the toxicity factor for chromium VI (0.005) would reduce the hazard by at least 2

orders of magnitude. Therefore, the hazards associated with chromium would be well below EPA's acceptable level.

For information concerning lead concentrations see oral comment and response from ARC Ecology Comment 5.

Finally, although the future residential risk was calculated to be 2×10^{-3} in the RI, this CR overestimates the actual site risk for several reasons. The CR is primarily driven by chromium, benzo(a)pyrene, and heptachlor. The chromium risk was calculated on the assumption that chromium is present at chromium VI. In general, chromium in soil is present as either elemental chromium or chromium III. Using the PRG for total chromium (which is more representative), the total estimated CR at IR-59 JAI under the residential use scenario is estimated to be 7×10^{-6}, which is within EPA's acceptable risk range. Accordingly, under a residential use scenario, no significant carcinogenic risks are expected from exposure to IR-59 JAI soils.

The draft final Parcel A RI report was revised to incorporate comments from the EPA, Cal/EPA, RWQCB, and ARC Ecology. The Navy, with concurrence from EPA and Cal/EPA, has determined that no action is required at Parcel A because current site conditions are protective of human health and the environment. Therefore, the Navy is preparing to transfer the parcel in mid-1996.

2 **Comment:** **The parking lot spring area presents Arc with another source for concern. One water sample collected at the spring showed motor oil contamination. Although the Draft RI/FS gives little reason to suspect that groundwater contributes to contamination around the spring. Arc believes it is too early to conclude that contamination in or around the spring poses no threat to human health or the environment. Was this contamination an isolated incident? If not, where is the motor oil coming from? Could the spring offer a pathway for contaminants to enter the groundwater? Is the**

area biologically sensitive? Arc requests that access by children to the spring be restricted, that the area be protected from development, and that a program of quarterly monitoring be maintained until these questions are answered.

Response: The presence of total petroleum hydrocarbons as motor oil in groundwater has only been observed in isolated areas on Parcel A. The water samples collected from the spring contained concentrations of motor oil ranging from 250 μg/l to 600 μg/l; the source of motor oil is unknown. The spring, which is located in the middle of a parking lot, is not in an environmentally sensitive area. Because the spring is present only occasionally, it is not believed to act as a pathway for chemical transport. Based on these factors, the Navy, with concurrence from the EPA and RWQCB, has concluded that the concentrations of total petroleum hydrocarbons as motor oil detected in groundwater within the Parcel A bedrock do not pose a threat to human health or the environment, or require further investigation, remediation, or groundwater monitoring.